Review of Agriculture Project Baseline Surveying Methods of Title II Funded PVOs

Part I: Socio-economic methods

Prepared for Food Aid Management
by Patricia Bonnard

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ABBREVIATIONS

ACDI	Agricultural Cooperative Development International
ADRA	Adventist Development & Relief Agency
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centro International de Agricultura Tropical
CRS	Catholic Relief Services
DAP	Development Activity Proposal
FAM	Food Aid Management
FAO	Food and Agricultural Organization of the United Nations
FFP	Food for Peace
FFW	Food for Work
FHI	Food for the Hungry International
IDB	Inter-American Development Bank
IFPRI	International Food Policy Research Institute
IMPACT	Food Security and Nutrition Monitoring Project
ISNAR	International Service for National Agricultural Research
JFS	João Ferreira dos Santos
KP	Knowledge and Practices
IIED	Centre for Research and Information on Low-External-Input and Sustainable Agriculture
ITAD	Information Technology and Agricultural Development
MSF	Medicine Sans Frontier
M&E	Monitoring and Evaluation
MOA	Ministry of Agriculture
MSU	Michigan State University
NARS	National Agriculture Research Station
NRM	Natural Resource Management
PRA	Participatory rapid appraisal
PVO	Private voluntary organization
RA	Rapid appraisal
RRA	Rapid rural appraisal
Save	Save the Children Fund
SCF	Save the Children Fund
TA	Technical assistance
TNS	Technoserve
UNICEF	United Nations International Children's Fund
USAID	United States Agency for International Development
VOCA	Volunteers in Overseas Cooperative Assistance
WB	World Bank
WFP	United Nations World Food Programme
WV	World Vision

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1. Introduction

The majority of Food Aid Management (FAM) member private non-profit organizations (PVOs) had expressed an immediate need to modify and improve their baseline survey methods currently employed in the implementation of United States Agency for International Development (USAID) Title II agriculture projects. This report presents the findings of a rapid first-cut review of baseline survey methods. Emphasis is placed on methods for which information and supporting documents were readily available, on problems shared by the majority of member PVOs, and on short-term recommendations that can be instituted easily by most PVOs regardless of their resource and technical capacity. Medium- and long-term recommendations are noted. However, the appropriateness of these recommendations is less universal and tends to be contingent upon the individual PVO's priorities; approach and strategies related to poverty alleviation and economic development; long-range organizational plans; and available resources.

1.1 Review Methods and Documents Used

Initially, the review was to be based on complete sets of baseline survey methods. This included sampling methods, formal questionnaires, other participatory and informal survey guides, and enumerator instruction manuals with definitions of terms and key variables as well as explanations of how questions were asked and measurements were made. Documentation on project objectives, selected indicators, and monitoring and evaluation (M&E) plans contained within Title II Development Activity Proposals (DAPs) were also requested. These documents were necessary in order to establish whether the survey methods enable collection of relevant data and information that link directly to project goals and objectives. This approach to information gathering was highly dependent on participating PVO central office staff's capacity to rally the cooperation of field staff. The short time allotted for the review, the frequency of PVO staff travel, and the limited means of communication with field offices significantly compromised this aim.

Fortunately, the USAID-funded Linkages project proved to be a valuable depository of DAP documentation. Many original DAPs, Previously Approved Activity Reports (PAA), Results Reports, and questionnaires could swiftly be retrieved from their extensive files. Table 1 presents an inventory of the documents acquired from the PVOs and the Linkages project office. The column labeled "questionnaires" refers to formal household baseline questionnaires. Only a few informal survey forms were located. While a number of M&E plans indicated that a mix of survey

methods are utilized over the life of a project, there was limited explanation as to how these methods were to be combined and whether they constituted a part of the baseline specifically. As a result, the review concentrated on the formal household baseline questionnaire. Since it is the primary and most common baseline survey tool, it is a logical place to start. The formal household questionnaire also provides a clear reflection of how well project objectives, implementation steps, and performance monitoring are aligned. While some PVOs and researchers may be more interested in developing new alternative M&E methods and feel that the formal household survey is passé or too technically demanding for most PVO contexts, many of the issues related to designing and implementing an effective standard baseline survey tool will continue to plague those attempting to the design alternative methods.

Information used for the review was also gathered through interviews conducted with the staff of member PVOs as well as knowledgeable individuals affiliated with a number of research institutes, universities, donor agencies, and other organizations engaged in M&E work (see contact list in appendix). Collection of information from sources outside the member PVO community was conducted on an as-time-permits basis. This activity was greatly constrained by the time-intensive nature of PVO document retrieval.

1.2 Approach

This first step in the review process was to determine which Title II projects should be included. Agriculture is a broad sector. It can encompass a wide assortment of components including production, post-harvest storage and processing, marketing, extension, adaptive research, credit, farmer associations, rural micro-enterprises, etc. However, as part of its reorganization process, USAID excluded a number of these components from what it now calls agriculture and, consequently, created a new, none-standard definition of agriculture that masks the critical relationships between a number of the components listed above. The Linkages project was able to furnished a list of Title II DAPs which cross referenced activities by cooperating sponsor (the PVO), country, and category: e.g., agriculture, natural resources, roads and infrastructure, etc. For ease and simplicity, this review relied on this classification system even though a number of the agriculture projects listed included large natural resource management, rural road construction, and/or rural micro-enterprise development components.

Because the assignment was to review baseline survey methods used in implementation of USAID Title II DAPs, the logical framework, generic impact and annual monitoring indicators, and other components of the USAID DAP guidelines were taken as given and not subject to review. In the short run, PVOs have to comply with these guidelines regardless of their preferences or the existence of better M&E approaches. While this review illustrates how PVOs can improve performance reporting to USAID, it also intends to help PVOs produce more relevant and meaningful data and information which will enhance their capacity to achieve their own distinct project management and program development aims. The report presents an overview of current PVO M&E structure and processes, observations on PVO execution of the DAP logical framework as it relates to the design of effective baseline survey methods, a detailed critique of formal household baseline questionnaires, a note on sampling methods, and some ideas for future studies.

2. Overview of Monitoring and Evaluation

The following section provides and overview of participating PVOs' institutional structure and technical resources for monitoring and evaluation as well as a brief note on USAID Food For Peace M&E guidelines. To make constructive recommendations, it was necessary to establish what is feasible for participating PVOs given their existing resources. Agricultural baseline survey methods developed for Title II programs are just part of a PVO's overall M&E system which encompasses a variety of sectors other than agriculture and both Title II and non-Title II funded programs. Consequently, this specific subset of tools is best examined in the context of a PVO's boarder capacity to design and implement M&E activities. The complexity, sophistication, and efficacy of agricultural M&E methods will be constrained by the PVO's technical and institutional capacity. The main objective of this report is to identify measures that improve M&E performance given the current capacities. However, as this overview demonstrates, there are a number of short-term actions that could reduce institutional and technical constraints and immediately improve capacity.

2.1 DAP Guidelines

All Title II Development Activity Proposals (DAPs) have to present a "logical framework" outlining the project goals, intermediate objectives or activities, outputs, and selected performance indicators (i.e., impact and annual monitoring indicators). Variations of this framework are used by the World Bank (WB), Inter-American Development Bank (IDB) and the United Nations' World Food Program (WFP). In conjunction with the logical framework, the cooperating sponsor (CS), or in this case the PVO, has to submit a monitoring and evaluation plan consistent with the DAP guidelines. This plan is part of the "Activity Objectives and Design" section of the guidelines implying that the establishment of objectives, program activities, and M&E system are integrated components of the overall project design. M&E should be considered at the inception of project planning.

Food For Peace (FFP) also publishes detailed guidelines on how the CS should track performance and recommends a list of generic indicators (see table 2 for a list of agriculture and natural resource management generic indicators). The list is limited. Significant project components are omitted such as agricultural marketing, credit, and micro-enterprise development. It is not difficult to imagine why PVOs tend go beyond this list attempting to identify performance indicators that are meaningful for their own management objectives. This review will not critique the generic indicators listed but merely notes that the PVOs are encouraged, and in some instances required, to use them.

2.1.1 USAID Reporting Needs

While M&E systems are a mechanism for observing PVO progress and performance, the data collected also serve as inputs to USAID's results reports and medium- to long-term program development as well as congressional releases, testimonies, and speeches. USAID, therefore, has a strategic interest in assuring that PVOs furnish relevant and reliable information. In countries or regions where there are more than one DAP with similar activities, consistent monitoring across DAPs assists in the compilation of USAID performance records. Under these circumstances, the guidelines encourage "...joint monitoring and evaluation plans..." (USAID, 1998:16).

2.1.2 PVO Experience in Dealing With FFP and USAID Missions

Complaints registered against USAID tended to be country specific. The most common criticism was overburdening the PVO with collection of data to measure too many indicators too frequently. Attempts by the missions to institute joint monitoring and evaluation has proven to be somewhat problematic. Some PVOs remarked that project objectives, activities, and working environments and activities are too dissimilar too warrant identical reporting. However, this does not preclude some degree of standardization. PVOs have also resisted the execessive frequency of data collection mandated by several missions. When USAID's strategic objectives and reporting requirements changed, one mission insisted that all Title II PVOs implement a new formal household survey which the mission erroneously termed a baseline. PVOs had all already initiated their projects, conducted baselines and were then forced to manage two simultaneous M&E systems. The layering was particularly burdensome for PVOs with multiple funding sources since they had to juggle conflicting donor opinions and requirements regarding the M&E process. They could not simply dismantle their original systems.

2.2 Three PVO Applications of the Baseline Survey

Although not always aware of the distinction themselves, PVOs will generally talk about three applications for the baseline survey: 1) performance reporting, 2) project management, and 3) program development. While these are all legitimate demands for information, the formal baseline survey is not always the most appropriate means of collecting the quality of data required to meet all three aims.

2.2.1 Performance Reporting Objective

Performance reporting is generally required by donors, in this case FFP. There are guidelines concerning report content and format, as detailed in the preceding section, and this output is incorporated into the results reports for both the mission and USAID as a whole. Using a logical framework, the focus is on performance indicators. Performance reports are also useful for project managers. If developed reliably, the results reports assist managers in tracking progress toward project goals and objectives. But results reporting provides an indication of change, not causality or attribution. One exception is that USAID requires PVOs to justify outcomes that fall below established targets. Under these circumstances, PVOs have to attribute shortfalls to some plausible factor(s).

2.2.2 Project Management Objective

While performance indicators are important to project management aims, there is an even greater need for understanding causality, for knowing what led to the changes in indicator values, which components of the project run smoothly and why, whether project operations or expectations have to be changed, etc. This type of information is valuable to managers even in the early stages of the project. Although this type of information contributes substance to reports and discussions with donors, the outputs are largely for internal consumption, and can be tailored to meet specific project needs. PVOs are not obligated to follow guidelines in developing the M&E methods that address project management objectives. A formal household survey may not always be the best approach. In fact, expanding a formal baseline survey to incorporate broader project management diagnostic and other information needs, often complicates and overburdens the baseline data

collection process. To get at causal relationships, smaller more directed formal studies, case studies, rapid appraisals, informal and participatory methods may better match the particular project context.

2.2.3 Program Development Objective

The third PVO application of the baseline survey, program development, relies on data collection to address two objectives: identifying potential future projects and building the PVO's overall agricultural development framework or approach to alleviating household food insecurity. Accumulated experience, fortified with data, suggests that certain strategies work in certain circumstances, e.g., fertilizer bean is readily adopted and increases soil fertility in wide range of agroecological and socioeconomic contexts, farmer to farmer extension approaches work in one context but not in others, etc. Collective experience and knowledge helps develop and reinforce a PVO's framework, strengthens future program designs, and contributes to the success of USAID programs. As is the case with the project management, program development requires performance measures as well as results that can explain behavior and imply causal relationships. The latter borders on, and in some cases includes, formal research pursuits. But, adding questions to the baseline survey to meet these aims almost always complicates and overburdens the M&E process. Instead, PVOs should conduct more directed studies with the assistance and guidance of national and international agricultural research stations, local and foreign universities, and/or the private sector.

2.2.4 Confusing Assessments and Baselines

There is one additional, but in this case inappropriate, application of the baseline survey. A number of PVOs combine or confuse the assessment, which is tied to project identification and development of a proposal, with the execution of a baseline. The assessment uses formal and informal survey methods and often purposive sampling in an effort to rapidly determine the need for a project and suggest reasonable development activities based on the problems, constraints and opportunities identified. Given the time that it takes to develop, review, rework, approve and set up the DAP, several years might elapse between the assessment and initiation of DAP field activities. This is ample time for assessed conditions to change, especially in a post-conflict context. In this case, data collected during the assessment could not serve as baseline indicator values. In addition, data needs are different: the assessment is diagnostic while the baseline sets representative benchmarks against which program progress is compared throughout the monitoring process and for the mid-term and final evaluations.

2.3 Current Institutional Structure and Capacity of PVO Monitoring and Evaluation

A look at the institutional structure of PVO monitoring and evaluation provides a quick impression of why PVOs have difficulty instituting effective M&E systems as well as their capacity for instituting change and recommendations. Table 3 presents an overview of the M&E structure of participating PVOs. Generally, M&E functions are not given sufficient priority and are not well integrated into a PVO's organizational structure. Two PVOs have no M&E staff in the field or at headquarters. Most PVOs assign M&E field tasks to staff who already have other demanding responsibilities. In many instances, this selected individual has minimum competency in M&E. In more than one case, the person was the country director, someone clearly overburdened with other administrative duties. The column entitled "M&E Execution" illustrates the large number and

variety of people who become involved in the M&E process, many of whom come from outside the PVO with limited knowledge of, and commitment to, the PVO and its on-going demands for relevant and reliable data collection.

2.3.1 Consultants

To fill a technical gap, most PVOs have resorted to contracting local or foreign consultants to conduct some of the M&E tasks in at least one of their project countries. The experience has been mixed. Several PVOs indicated that on the whole this system works well and they have begun to develop a pool of consultants familiar with their PVO's operations who can be called upon as the need arises. Others report having had bad experiences. While it is true that some consultants take on jobs for which they are not well-qualified or have insufficient time to adequately complete, most PVOs do not recognize that even excellent consultants need direction and significant interaction with field staff who have technical familiarity with M&E and agriculture.

2.3.2 M&E Technical Support

Most PVO field offices don't have sufficient technical resources to assist them in the designing their M&E systems. This is also true for a number of PVOs that have developed manuals but have not distributed them to all of their field offices. Both Care and CRS indicated that the accessibility of technical resources and expertise varies widely across project countries, yet both produce their own fields guides on a number of M&E and project implementation topics. In the case of Care, country and regional offices produce manuals as well. Food For the Hungry International (FHI), on the other hand, has created, or modified existing, manuals and guides that are available at all country offices and at a level most field staff can understand. Most PVOs were aware of the IMPACT publications and had positive impression of assistance provided by Linkages staff. The guidelines on agricultural productivity measures and sampling were well received and relatively widely distributed. Some PVOs had made certain that field offices had copies as well. Several PVOs noted that IMPACT guidelines are too descriptive and not prescriptive enough, and that they are written at too high of a technical level, especially where local counterparts play a significant role in the M&E design and execution. PVOs and the Linkages project ought to consider translating these guides into other languages: in particular, Portuguese, Spanish, and French.

Despite these shortcomings, PVOs generally felt that performance reporting for Title II funding had greatly improved. They had moved from accounting for project inputs and outputs to grappling with measuring the effects and impacts of project activities. Currently, CRS is interviewing candiates to fill a new senior level technical M&E advisor positon and is instigating a complete overhaul of their approach to agriculture and M&E activities. Contributing to this exercise are Johns Hopkins University, CIAT, and ITAD. ACDI/VOCA wants to increase their local capacity building efforts in this area. Care is allocating substantial resources to improve their M&E systems. The new monitoring and evaluation specialist located at the Atlanta headquarters has developed a new integrated "D+M&E" approach to program design, monitoring and evaluation. Seminars are conducted as part of field staff's regular training sessions at the head office. Care has also developed a new software package, MER, which semi-automatically matches project objectives with Care's extensive list of generic indicators and related survey questions. Their aim is to make MER available through the internet providing greater access and to field offices and allowing for broader sharing and exchange of information among all Care offices. Care has also established links with several US universities, IFPRI and Farmer Field Schools.

2.3.3 Use of M&E Output

A number of PVOs reported that data collected are rarely used other than to produce requisite FFP reports. Data analysis often drags on for more than one year and much of the data is never analyzed. Information does not adequately filter into management decision making. Statistical analysis is limited to calculations of means and percentages, in some cases measures of dispersion such as standard deviations, and in only one or two instances tests of statistical significance. PVOs struggle to design and execute the statistically representative sampling methods required by FFP, but then fail to take advantage of this rigor and substantial investment.

2.3.4 Summary of M&E Issues and Recommendations

In reviewing the institutional structure and capacity of PVOs as it relates to M&E, a number of tendencies have emerged. While most PVOs can not be characterized as possessing all these negative tendencies, all PVOs have experienced several of these difficulties in at least one of their project countries. It is interesting to note that while PVOs vary greatly in both financial and human resource capacity and how they conduct their development programs, e.g., through local counterparts or through pre-established regional offices, they face remarkably similar problems. These tendencies are as follows:

- A lack of a consistent M&E system established throughout the PVO's program;
- A lack of M&E dedicated staff in the field and running the M&E process;
- Many people involved in all stages of the M&E process;
- High turnover of staff involved in M&E process;
- No assessment of how to set up an M&E system and conduct a baseline survey in the specific project area context;
- A lack of M&E resources available to field staff and at their level of understanding;
- Isolated and field driven M&E activities such that knowledge is not collected and shared, hence there is no institutional knowledge building;
- M&E results are not adequately utilized by management.

Finding appropriate solutions to these problems will depend on the specific PVO's resources, priorities, long-range organizational plans, and method of providing development assistance. At a minimum, all PVOs should have someone with strong M&E technical skills overseeing every phase of the M&E exercise and working closely with agriculture specialists. The best solution would be to place an M&E-dedicated specialist with appropriate skills in every field office. Whereas this maybe possible for larger, well-funded PVOs, like World Vision (WV) and Care, it would be impractical for smaller PVOs such as Africare and FHI. Alternatively, one or more roving M&E-dedicated specialists could be placed in a regional or head office. A significant portion of the M&E officer's time would have to be spent in the field assisting and training local field staff. This does not exclude the use of consultants, local private businesses and universities or local counterparts. The important point is that there has to be technically competent, undistracted individual overseeing the M&E activities of every project. This M&E officer should have sufficient sectoral experience, and if not, s(he) should work closely with technical staff who do. PVO managers have to provide clear explanations of their information needs early in the M&E design stage.

From a completely different angle, FFP could initiate the change. FFP could allow PVOs to expand their M&E budgets to allow for staffing a appropriately skilled M&E officer or contracting better,

longer-term consulting services. Alternatively, USAID could fund a project that would specialize in providing technical assistance in M&E. The contract could be granted to a consortium of PVOs, to the Linkages follow-on project, to a pre-existing organization or firm with strong background in M&E and capacity building, or to a completely new entity.

All M&E plans should be developed at the time the project is being designed. PVOs need to undertake an assessment of issues related to establishing an M&E system and conducting field work, including the use of various M&E survey methods, within the specific geographic and cultural context of proposed target areas. PVOs generally do diagnostic studies or assessments prior to writing a project proposal, but overlook this topic. The M&E assessment could be included in this step.

PVOs head offices need to supply field offices with useful technical resources. All field offices should have copies of the IMPACT guidelines series, FFP DAP guidelines and other useful technical references such as IFPRI-IFAD discussion papers. Following the lead of FHI, these manuals could be tailored to meet field staff technical knowledge and capacity. Technical manuals and training guides could be shared among PVOs. An internet link or discussion group could be established where PVO staff could post useful information and resources as well as list questions related to M&E.

The best way to get management to use M&E results is to improve the relevance, reliability and timeliness of reporting. Head offices could establish and disseminate principles for quality, action-oriented reporting for project management purposes. These principles could highlight the different information needs for different levels of management. Institutional development funds could support this activity as well as training in improved analysis, presentation and use of M&E data and information.

3. Observations on PVO Use of the Logical Framework and Baseline Survey Design

While this review is focused on the baseline survey, it was necessary to plow through project logical frameworks in order to determine whether the survey instrument would yield relevant and meaningful data given the stated objectives and desired performance monitoring. A number of general observations concerning the PVOs use of USAID's logical framework are included here because they illustrate weaknesses that tend to fester once the PVO moves on to development of their M&E system and specific baseline survey methods. Both within and across PVOs, there is tremendous variation in the presentation of DAP project objectives, supporting activities, and underlying assumptions.

3.1 The Logical Framework

Tables 4 and 5 present a somewhat modified logical framework for the PVO Title II agricultural projects that were reviewed. Table 4 presents the projects in alphabetical order by PVO, while table 5 presents the same information only grouped by country. The term "aim" replaces the project goal since all DAPs, by definition, have the goal of improving household food security which does not adequately describe what the project does. The aim attempts to summarize the main agricultural components of the project, giving a clear sense of what the project does. "Intermediate activities" are the specific agriculture-related actions undertaken in pursuit of the project aim. The

information had to be massaged in order to link objectives with activities (see number coding on tables) because it was not always clear from the documents obtained from PVOs how specific indicators were linked to activities or the overall food security goal. Apparently misplaced or illogical indicators that were clearly documented in PVO logical frameworks were listed unaltered on the tables. The following list contains a number of common problems and difficulties observed.

- Using output indicators, e.g. number of women receiving grants or value of grants, as a measure of impact;
- Indictors that are not objectively measurable such as households "benefiting" from irrigation, improvement in "well being," or reduction in "extreme" poverty;
- Listing indicators for which there is no corresponding question on the baseline questionnaire, e.g., aiming to identify the percentage of households pruning cashew trees but no question on pruning behavior appeared on the questionnaire;
- Selecting an indicator that is too difficult to measure, e.g., change in net farm income;
- Listing a primary objective for which there is no corresponding indicator, e.g., pruning cashew trees in one of few improved practices to be introduced but there is no indicator related to the activity, nor cashew in general;
- Using wealth indicators[1] as a proxy measurement of income;
- Insufficient utilization of "assumption indicators" such as rainfall or market prices;
- Defining objectives and indicators in the identical terms;
- Including numerous impact indicators while FFP requires one per activity;
- Including too many annual monitoring indicators, e.g., percentage increase in households selling nearly every possible crop measured individually;
- Limited identification of underlying assumptions;
- Tenuous links between program objectives and intermediate activities, or between intermediate activities and indicators;
- Insufficient reference to previous field experience and development literature;
- Inclusion of many questions in the baseline questionnaire for which there was no corresponding indicator;
- Inclusion of many questions in the baseline questionnaire that aren't apparently relevant to M&E.

3.2 Confusion of Economic and Survey Terms

Some confusion concerning basic economic and survey terms were noted in reviewing the DAP documents. Not all PVOs made these mistakes but the mistakes were common enough to warrant note.

Productivity: Most PVOs equate increases in production or yields with improvements in productivity. Productivity is a relative term. It is simply output per unit input employed. Most PVOs measure output per unit of land, e.g. yields. The problem arises when PVOs make temporal comparisons. They still use output per unit of land, but the level of one or more inputs may have

[1] Wealth is measure of stock, while income is a measure of flow. Both can be used to develop classes of farmers. However, where the a project objective is to increase income, wealth proxies may not be an appropriate indicator of change. Poor households will tend to spend additional income, not accumlate. In this case significant income changes will not be captured in the wealth proxy indicator. Furthermore, assets and other gauges of wealth can vary widely across communities, regions, and even time in the post conflict situations.

also changed. If tremendous amounts of fertilizer were applied to one of the fields for which they measured yields, the output per unit of land would tend to increase, at least in the short run, but at what resource cost? The yield measure does not account for all factors. Would this still be a gain in productivity? Probably not. But using this generic indicator, performance would appear to have improved.

PVOs propose to increase output through the introduction of improved sustainable agriculture practices. In many instances, what PVOs are more directly attempting to do is improve soil productivity. Many of these practices first build the productive capacity of the soil which only later leads to increased output. The entire process can extend over a number of years and progresses through several measurable phases. In these instances, other agronomic indicators that monitor changes in soil quality would be more appropriate than the standard increased yields or production indicators. This is especially true given relatively short project life cycles and PVO staff needs for immediate feedback from the field.

Sustainability: Going one step further, several PVOs stated that increased production or yields for two years would indicate sustainability. There are dozens of ways in which sustainability has been defined but nearly every one of them points out that sustainability has more to do with the lack of deterioration of inputs, than with merely expanding output.

Head of Household: A household can be defined as the group living together, eating together, producing together, sharing a budget, etc. As the definition of the household changes so does the definition of the logical head of household. Generally, PVOs record the customary head, in most cases a man. However, it may be the facto head who is important, especially if gender-specific issues are relevant. Many of these DAPs claim to be gender sensitive, but not one made this distinction.

Unit of study: All DAPs, by definition deal with household food security. But, a number of the intermediate activities address the community, associations, agricultural decision makers within a household, fields or plots, etc. Indicators and monitoring tools need to correspond to the entity or unit of study which the activity addresses. It should also be noted that there can be more than one decision maker per household.

Off farm and Non farm: PVOs use these terms interchangeably. Off farm is a more common and standard term. It refers to that which does not occur on the farm but does comprise part of the household's income. Usually, this is wage employment. It can be agricultural or non-agricultural in nature. Non farm refers to activities not based in agriculture such as basket making or fuelwood collection. Some interpretations include non-agricultural off-farm employment. Still others define non-farm production as all of that which is destined for the market.

Subsistence Verses Commercial: Subsistence crops are grown predominantly for household consumption. Commercial or cash crops refer to those crops which are grown primarily for sale. Examples of cash crops include cashews and cotton. "Subsistence" farmers are not strictly subsistence producers. Sometimes they grow small quantities of cash crops, but they also frequently sell what are typically considered subsistence crops, e.g. maize, beans, and cassava. None of these terms are absolute.

4. Baseline Questionnaire Review

This review centers on the formal household baseline questionnaire. Since it is the primary and most common baseline survey tool, it is a logical starting point. It also provides a clear illustration of how well project objectives, implementation steps, and performance monitoring are aligned. Although some PVOs and researchers may be more interested in developing new alternative M&E methods and feel that the formal household survey is passé or requires technical expertise beyond that of most PVOs, many of the conceptual and operational issues related to standard formal household surveys will continue to plague those attempting to design and implement alternative methods. One advantage to reviewing formal methods is that there tends to be more and clearer documentation involved and, subsequently, greater transparency. Many farmer-friendly methods of data collection use pictures and diagrams instead of words or questions. In nearly every case reviewed here, diagrams could substitute for words. But, it should be remembered, that no matter what the form of the question, verbal or pictorial, the PVO still has to end up with certain data and information in order to properly report on performance.

Because most enumerator instruction guides were not available, it was impossible to discern how terms appearing in the questionnaire were defined or what types of measurement tools were employed. Therefore, many of the following comments are delivered as words of caution. Some baseline questionnaires combine agricultural and health issues. It is recognized that what might seem irrelevant or inappropriate for agriculture, may have been included to meet some additional health objective. Comments presented below relate strictly to agriculture.

Agriculture baseline questionnaires are generally too long and have many poorly constructed and irrelevant questions. PVOs, like most field researchers, tend to load their questionnaires, preferring to retain dubious questions rather than eliminate them and uncover critical data gaps once the survey is completed. Unfortunately, this behavior is like an addiction. The retention of one dubious question seems to lead to accumulation of many others. In the end, the focus of the questionnaire is diluted, and insufficient time is allotted to gathering information on key baseline characteristics most closely related to primary project components. When it comes to questionnaire design, there isn't one answer to fit all situations, no indisputable approaches to probing respondents for information. PVOs, like all other field researchers, have to decide what level of accuracy and bias they can tolerate. Whoever designs the baseline needs to ask: will the data be sufficient to measure the selected performance indicators; and will the data assist in administering the project, planning new activities, and forming lessons learned? The information acquired through the baseline exercise is as good as the baseline tool.

4.1 The Respondent

From reading the available documents, it was not clear whether enumerators were instructed to speak with different respondents when filling in different parts of the questionnaire. Judging from the description contained in the M&E plans, enumerators attempted to interview just one respondent according to the following order of preference: the head of household, then the head wife, some other adult, etc. Yet, it is absolutely critical that they interview the household member most familiar with an activity, e.g., selling agricultural products, preparing meals, selecting seed, etc. Generally, women can correctly and swiftly answer demographic and food consumption questions. Men, including the head of the household, can rarely provide accurate information on these topics. With regard to other typical components of household surveys, the appropriate

respondent will depend on the cultural context. Women tend to engage sales, particularly smaller volume sales of fruit, vegetables, stored grain, and processed agricultural products. Almost universally, they take full responsibility for all home garden tasks. Different household members rarely know how much time other household members spend performing agricultural tasks or what other members earn from off-farm employment.

4.2 Demographics

Most PVOs include a large table for collecting household demographic information: names, ages, gender, relation to household head, educational level and in some cases religion. A generic format would look something like the following:

Name	Relation to HOH	Sex	Age (years or months	Education

Field experience has shown that it requires about one hour to collect this type of information, and often longer if the questions are posed to the head of household. Agricultural projects rarely require such detailed demographic data. The project may need to calculate the dependency ratio[2] or the number of working age males and females, or it may wish to know the educational level of agricultural decision makers or whether the household has at least one literate member, but it does not require knowing everyone's educational attainment. Specific ages, the sex, and family relationship of the each household member is rarely relevant. The level of detail represented in this table is unnecessary, considerably lengthens the time it takes to complete the questionnaire, and fatigues both the enumerator and respondent(s). The time saved in simplifying the demographics section could be more wisely applied to production and technology adoption topics.

While still collecting too much demographic detail, both Save the Children (SCF) and FHI have simplified the age question by entering just three age categories: under 10, over 55, and between 10 and 55. Adopting their approach and eliminating all superfluous information, the demographic table might look something like the following, where the number of household members meeting the criteria is entered:

# 10 years and younger	# Older than 10 but younger than 55		# 55 and older
	Male	Female	

[2] The dependency ratio is defined as the ratio of non-working age members to working members age. Non-working age is variously defined but less than 11 or older than 60 would represent the typical Title II rural context.

4.2.1 Migration

This type of format does not account for household members who spend most of their time in other locations, e.g., adult males who migrate to earn income or young adults in school. In the context of Southern Mozambique where many men migrate to South African mines, the demographic data would poorly represent the actual labor force and household size. Adding an additional column to check whether the individual is present for a pre-specified minimum period of time would account for this. Without doing so, the data is meaningless. While WV's Mozambique questionnaire does ask if each individual migrated over the last year, it does not ask about the duration of the absence. WV could use the same format combined with a meaningful minimum term of absence. Setting minimums or maximums is easier and more accurate than attempting to extract specific information from respondents.

4.2.2 Earnings

Several PVOs chose diversification of income sources as one of their performance indicators. In these cases, the demographics table is frequently used to collect information about individual household member's other income earning activities, e.g., off-farm and self employment. As with the above migration question, PVOs rarely ask for the duration of this employment or the extent to which it contributes to overall household income. A "yes/no" answer or a code representing a specific activity gives no indication of the importance of that activity: someone performing one day worth of work as a hired laborer on a local commercial farm would receive equal recognition as someone working several months in South African mines or all year as a teacher. There should be a column for entering the range of time an individual is engaged in the activity. If the type of employment is recorded, the options should be limited to a small set of meaningful categories. Although the format could be improved, ACDI/VOCA's Cape Verde project attempted to collect information on categories of income generating activities, accounting for time spent and amount of income earned.

It should be noted, that respondents, whether male or female, tend to underestimate women's contribution and inflate males contribution. In fact, many respondents will simply overlook what women do. Enumerators have to be trained to probe for this information in order to reduce the resultant non-sampling error and bias of such tendencies.

Finally, a number of PVOs collect information on goods and assets to create a proxy for income and monitor changes in income over the life of the project. It should be noted that wealth is measure of stock, while income is a measure of flow. Both can be used to develop income classes of farmers. However, where the a project objective is to increase income, wealth proxies may not be an appropriate indicator of change. Poor households will tend to spend additional income, not accumlate. In this case significant income changes will not be captured in the wealth proxy indicator. Furthermore, assets and other gauges of wealth can vary widely across communities, regions, and even time in the post conflict situations.

4.3 Agricultural Production and Yields

The literature on how to measure agricultural production is expansive and inconclusive. One IMPACT document, "Agricultural Productivity Indicators Measurement Guide," goes into detail concerning the pros and cons of several common methods. The issue of whether farmer estimates

or direct measurement are more accurate remains unresolved. As a result, many PVOs use both approaches, and attempt to arrive at yield and production estimates based on a triangulation of survey methods. A typical set of survey questions on agricultural production and yields looks as follows:

Crop	**Area (ha)**	**Production (kg)**	**Yield (kg/ha)**
Maize			
Beans			

However, there are several problems with this format. Data are collected for each crop without recognition of the cropping system. Production and yields of maize intercropped will be much different from maize monocropped. The survey tool must keep track of what the farmer is actually estimating. Even with direct measurement, it is paramount to tie output and yields to the cropping system. For the Uganda project, ACDI/VOCA accounted for the principal cropping systems for a few targeted crops by developing a matrix of intercropping options. The table below is a modification of that table. Maize monocropping is entered in the maize by maize boxes. Maize and bean intercropping is entered in the maize by bean boxes with a separate space for maize and bean production.

Where it is customary for households to cultivate several non-contiguous plots, it is helpful to draw simple maps of the plots and ask the respondent to estimate the production from each plot separately. Such a map is also useful for keeping track of various key inputs, cultural practice and technology adoption.

	Maize		Bean		Cassava		Soybean	
	ha	kgs	ha	kgs	ha	kgs	ha	kgs
Maize		m:						
Beans		m:		b:				
		b:						
Cassava		m:		b:		c:		
		c:		c:				
Soybean		m		b:		c:		s:
		s		s:		s:		

Generally, PVO questionnaires indicate that production is measured in kilograms and yields in kilograms per hectare, but farmers often use other units such as sacks, bundles, etc. Farmers should never be requested to make the unit conversion themselves. The survey design has to include a system of standardization. In some instances, there are just one or two different units of measure. In this case, the PVO could establish average weights, e.g. 50 and 100 kg sack per sack prior to executing the fieldwork. Then in the field, enumerators ask farmers how many sacks and what type of sack. Production measured in kg is calculated once the data has been entered. The same would be true for yields.

Production estimation is further complicated when agricultural produce is harvested over an extended period of time as is cassava or sunflower, or in more than one form, e.g., as immature

grain as hunger coping strategy and as mature grain at regular harvest time. Where cassava is a primary food crop or the project is attempting to alter cassava cultural practices in particular, it may be necessary to ask about production for several discrete periods of time representing segments of the full lengthy harvest season.

4.4 Accounting for Inputs, Factors of Production, and Other Area Specific Information

PVOs tend to collect data about production problems (e.g. pests) and critical inputs or factors of production (e.g, improved seed, fertilizer, labor, animal traction, etc) without linking the data to targeted crops or specific fields. The latter is a more serious concern where the introduction of improved natural resource management (NRM) practices is a primary project intervention.

Farmers manage their various farm enterprises differently, e.g. there is a greater tendency to apply fertilizer and irrigate horticultural crops. Some crops tolerate a wide range of climatic conditions, others do not. If project activities center on a specific crop (e.g., maize, sunflower, or cashew), questions concerning pests, disease, inputs, and labor should relate to those farm enterprises specifically. Then the data has more meaning and can feed back into project administration and the formation of recommendations to farmers. If the project promotes technologies and practices that are expected to build the soil quality of hillside farms, questions should reference specific plots and identify the type of terrain and other relevant agronomic characteristics. Baseline surveys rarely determine whether households have multiple plots. One questionnaire asked how many fields a household had and then preceded with a long list of questions about “the” field as though all farms were comprised of one contiguous unit.

Several PVOs selected net income from agriculture as a performance indicator. It is extremely difficult to accurately estimate costs of production over an entire year and from multiple farm enterprises. Yet, estimating the cost of production is a prerequisite to calculating net farm income. Calculating the value of equipment is meaningless in contexts characterized by high rates of inflation and poor record keeping. With a one-time survey, it is impossible to impute the value of labor, especially family labor, employed in a series of enterprises over an entire season. Farmers can’t remember. Enumerators won’t be able to easily discern whether the farmer is recalling labor used in all farm activities, in production of primary crop or in the one just harvested. Data on household labor use will not be reliable.

Questions concerning the costs of hired labor are universally too simplistic. There is no distinction between wages paid for different tasks performed, seasons, genders, or ages (i.e., child verses adult). Treating all wages rates the same introduces non-sampling error. Moreover, there is no record of in-kinds payments such as meals or local liquor. Such modes of payment can be the prominent mode, particularly in Africa.

PVOs should be discouraged from selecting performance indicators that are based on such detailed accounting of costs. The baseline might include specific and detailed questions on an input, such as family labor allocation, if the project is to introduce a technology which is expected to dramatically alter that input use. But, in general, if project managers have a need for farm budget information, small tailored studies of representative farm types would be more suitable than large formal household surveys. Vaguely constructed questions concerning production costs and constraints will only yield confounding results and misrepresent household behavior.

4.5 Adoption of Improved Technology or Practices

Adoption of improved technology or practices is treated separately from other inputs because it is one of the primary intermediate strategies included in most agricultural DAPs. The sustainable agricultural practices specified in nearly all the DAPs reviewed, are practices and technologies that are adopted at the household as opposed to the community level. The latter fall under natural resource management and are not included in this review.

The only monitoring and evaluation plan that mentions using visual inspection of farmer fields to verify adoption of improved practices is the SCF's Mozambique project. They do the same for improved storage technology. The rest of the PVOs apparently rely on household baseline questionnaire responses for adoption data. Most formal household questionnaires include a technology or sustainable agricultural practices section. Typically, there is a check list of household adoption which relies on farmer reporting and looks like the following:

Practice	**Adopted (yes/no)**	**Source of Information**
Compost		
Contour planting		
Plant in lines		
Improved seed		

There are problems associated with depending on respondents for adoption information and asking such simplistic questions. First, farmers are not always familiar with the terminology of improved sustainable agricultural practices. They may not use the term contour, stating that they don't plant in straight lines. This can create confusion between contour planting and planting in straight lines, both considered sustainable agricultural practices and promoted by a number of DAPs. Second, farmers often want to please or impress their interviewers and will claim to have adopted practices when, in fact, they have not. In some cases, they will not have heard of the practice. Third, some farmers will be just experimenting with a practice, they haven't actually accepted it yet. In this case, they probably will have established it in a small area, only a portion of a field. They may have chosen a less productive area hoping to minimize the risk associated with innovating. Finally, farmers often think that they are using a practice when, in fact, they have only partially adopted or implemented the practice incorrectly. The above method of recording adoption information falls prey to all of these situations leaving much room for non-sampling error.

For monitoring purposes, project technical staff can verify farmer practices through personal contact and field visits. However, making site checks in order to establish the baseline is impractical. Households generally have more than one field and the fields are often widely dispersed at distances of an hour or more travel by foot.

Project staff should develop a broad local vocabulary specific to the improved practices they intend to introduce. This can be done during the M&E assessment. Staff accumulate suitable local expressions through informal discussions with farmers, supported by diagrams and field visits. Then, enumerators equipped with the appropriate vocabulary can also use the diagrams as aids in conducting the baseline survey. It is extremely important that field staff receive ample training in

the use of new terminology as well as clear explanations of the individual practices. These steps will eliminate some of the miscommunication.

PVOs need to develop techniques to sort out cases where farmers are misrepresenting their practices. Additional conditional questions probing for clarification of how the practice is employed can be added to the baseline questionnaire. FHI uses the Knowledge and Practices (KP) survey. When a farmer states that s(he) uses a practice, the enumerator asks a series of qualifying questions. It is the enumerator who makes the final determination as to whether the farmer is an adopter. This method requires well-trained field staff.

As with production and yield data, the enumerator and respondent should jointly draw a map of the different fields. The respondent then indicates which fields have which practices, and over what general area (e.g. the entire area, half, a corner, one row, etc). This is particularly helpful to determine whether the placement of trees constitutes an agroforestry practice or a simple planting. The enumerator can also ask how long the respondent has used the practice. Systematic collection of data in the form of maps can be later transcribed into simple computer codes.

4.6 Agriculture Marketing

Being largely informal, and in post-conflict situations thin and disarticulated, agricultural marketing in the context of most Title II programs is difficult to characterize and measure. Therefore, it is not surprising that there are many problems related to PVO approaches to establishing a baseline for monitoring and evaluating of agricultural marketing. Some problems relate to the design of questions concerning household agricultural product sales. Others relate to broader market performance issues. This distinction between improving agricultural marketing systems and increasing the level of household agricultural marketing is not always clearly articulated in the justification of DAP project activities, the selection of indicators, and the subsequent drafting of interview questions.

4.6.1 Marketing Information

Marketing components of DAPs are not homogenous (see tables 4 and 5). In Mozambique, several PVOs limit their agricultural marketing intermediate activities to the promotion of higher household agricultural outputs and sales. Others engage in establishing and improving marketing information systems, rehabilitating roads, forming or reinforcing farmer associations, etc. A formal household baseline questionnaire can not serve as the primary method of collecting information on product flows along rural roads, or performance of farmer associations. It may not be the best method of collecting benchmark information on potential household benefits from project market interventions.

Households benefit from improved marketing systems in a number of ways. They receive improved selling prices, and have access to a greater number and variety of buyers as well as improved and less expensive transportation for themselves and their commodities. Households also have better access to cheaper inputs. A rapid rural appraisal (RRA) of the marketing system could be a more effective, time saving and less expensive approach to gathering basic market baseline data. Through systematic coverage and interviewing of key informants, field researchers can determine prices and costs at various points along the marketing chain, key constraints confronting different market participants, and other relevant market information. One drawback of RRAs is that they

require the field researchers to have a relatively high level of expertise in rural agricultural marketing. This implies greater costs per field researcher but the since RRA are of short duration, the overall costs may be lower as compared to alternative methods.

PVOs can also collect data relevant to these benefits with a formal household questionnaire but without having to inquire about specific transactions. Enumerators can collect baseline farmgate price data in the following manner:

Crop	Season	Price/Unit	Unit	Unit Weight

This data can be collected from every household, or just once per village. Crops could be limited to a pre-determined set of common or targeted crops. The season would be recorded by a code representing each relevant season. Relevancy would be determined prior to initiation of the fieldwork. If sales at locations other than the farmgate are common or will be promoted through the project, another table could be introduced in order to capture baseline values for sales conducted at buying posts, stores, etc.

Many PVO baseline questionnaires contain question regarding buyers, means of transportation, etc. Generally the respondents are asked to list all types of buyers with whom they trade. Respondents are not asked to indicate who is their primary buyer. Nor do they reference the crop that is transacted. If the objective of the project is to improve oilseed or cashew marketing, questions should refer to oilseed or cashew. General, poorly specified questions induce non-sampling error, and the data simply confound the analyst's ability to interpret them, indicator values, and important relationships.

4.6.2 Household Agricultural Product Sales

Collecting reliable data on household agricultural sales is extremely difficult and time consuming. It is important that the enumerator speaks directly to the individual household member who conducts the transactions. As mentioned above, it is rarely necessary to collect specific household agricultural sales data in order to monitor marketing, but since some PVOs chose a value of agricultural sales indicator, issues related to collecting the supporting data are discussed here.

PVOs have many problems collecting data on household agricultural product sales. The most obvious shortcomings are: asking farmers about their sales as though there was just one aggregate sale per crop, and disregarding important reference information. Households tend to make several large sales directly after harvest and then many smaller less regular sales later in the season. To be meaningful, price data has to reference the time, location, and type of buyer. Customarily, prices are reported in local currency per kilogram. Where there are standard units of measure such as 50 kg sacks, the price per sack can be recorded in the field, and later converted to kilograms. Sales by the sack are more common closest to harvest. Sales occurring latter in the agricultural season tend to be small and more irregular. Units vary more as well. Although there is great variety among PVOs, a typical baseline sales table might look something like the following:

Crop	Quantity	Total Sale	Price
Maize			
Beans			
Cassava			
Cashew			

It is not uncommon for all units to be missing. Quantity could be the number of sacks, number of bundles or number of kilograms. Note that there is no column for units. Therefore, it is impossible to know which it is. The price could be per unit (e.g., sack) or per kilogram. There is no indication at what level in the marketing chain that price was transacted. More importantly, a table that has room for one entry per crop assumes that just one sale was made or the same price was applied to all sales. This is highly unlikely. This type of table will not pick up any seasonal variation in sales behavior, nor the typical variety of prices and buyers. One way of improving the format would be:

crop	# of units	unit	price/unit	when	where	to whom

The crop is entered only if there was a sale of that particular crop and as often as there were sales. If units are not pre-weighted, another column for unit weight must be added. Since farmers can't remember details on every sale, the enumerator could ask the farmer to list three sales that occurred at harvest and the three most recent, that is if the survey is being conducted during or near the hunger season. This will not yield a total household sales value, but will afford a clear understanding of the level and type sales transactions during the two dominant and extreme seasons. The information will provide a sound foundation upon which to make future comparisons. PVOs will have to decide how they wish to enter sales transactions prior to initiating the fieldwork so that every enumerator fills the same guidelines.

4.7 Self-Provisioning of Food

A commonly selected generic agricultural productivity impact indicator is the number of months of household grain provisions. Several projects chose to measure this by asking one simple question: how long do you store agricultural products or food. This is too general. The respondent will offer information on whichever crop comes to her/his mind, creating confusion in interpreting the data. Households tend to store different crops for different periods of time, some due to perishability, others due to limits in the available stock. Time in storage should be recorded by major food crop in a simple format such as the following:

Crop	Time in storage (months)

Typical crops to include would be: maize, rice, sorghum, millet, tef, beans and peanuts. The choice is context specific. The reference period should be the previous year.

Improved storage questions are equally vague and rarely crop specific. Just as with time stored, the use of improved storage technology should be recorded per crop. A third column for recording the type of storage facility could be added to the table above. This variable could be coded according to the range of expected storage practices.

4.8. Management of Baseline Data

Reading through the baseline questionnaires, a number of problems related to entering and managing the data were identified. The following is a list of the more common mistakes that were readily identified and are easily corrected:

- If variables have numeric names, the first digit or two should provide a reference to which section of the questionnaire the variable is linked, e.g. vi1 and vii28 where vi and vii are respectively the production and sales portion of the questionnaire.
- Do not permit multiple responses in answer blanks set aside for just one response.
- There should be a code to distinguish between no reply, no, and not relevant.
- Codes for "yes" and "no" should be the same throughout the questionnaire. Using "0" rather than "2" for "no" simplifies programming.
- Where similar replies are expected, keep the coding the same, e.g., the codes for a 50 kg sack or for maize should be the same throughout the questionnaire.
- To facilitate data entry and programming, questions should follow a similar format where possible.
- Coded responses should be mutually exclusive, e.g, truck and vehicle are not mutually exclusive; car and bicycle are.
- Do not ask respondents to use fractions or percentages. They do not understand these abstractions. Africare used an acceptable method to get around this problem. A pile of beans was portioned out by the respondent to indicate proportions of output and input allocations.

7. A Note About Sampling

It was difficult to retrieve information on PVO sampling designs. Monitoring and evaluation plans included in the DAPs did not contain enough detail, and PVO headquarters generally did not have specific information from the field. As table 2 indicates only FHI's head office was able to provide sampling information for all projects. FHI applies one basic sampling method, and has developed a field level manual and training course that all project offices receive. ACDI/VOCA Uganda field staff and Africare's oilseed project in Mozambique both furnished documents containing clear and concise explanations of sampling procedures. All three PVOs used the same sampling designs and calculations of sample size that are outlined in IMPACT's "Sampling Guide."

Despite the limited documentation, PVO head office staff expressed an interest in sampling and requested that at least a brief note be included in this report. Several of the head office staff felt

that their field offices did not have the technical expertise to design baseline sampling procedures. The IMPACT sampling guide is short, only 45 pages, uncluttered, and relatively easy to understand. PVOs are encouraged to acquire and disseminate copies to their field offices. Several PVO staff members commented that the guidelines were descriptive but not prescriptive, and written at a technical level too high for most of their field staff, particularly local counterparts. One solution would be for the PVOs to rewrite and tailor the IMPACT guidelines to fit their specific needs. PVOs and the Linkages project are encouraged to translate these manuals into other commonly-spoken languages such as Portuguese, Spanish, and French. Development of materials in other local languages should be the responsibility of the PVO with the specific need.

Given that good, readily available guides already exist and little specific information was available from the field, this review will not attempt to critique PVO sampling methods nor instruct PVOs on how to design and conduct sampling. However, the IMPACT sampling guide did not discuss the definition of project participants or different types of controls groups. Therefore they will be dealt with briefly here.

7.1 Defining Project Participants or Beneficiaries

The way in which a PVO defines its' project participants or beneficiaries will influence the sample size. Some PVOs are restrictive. They focus on a relatively small and highly targeted group. The beneficiaries participate in training and other activities and project technical staff continually follow up with them in the field. As a consequence, the PVO knows every individual beneficiary. Other PVOs are more expansive in defining their beneficiaries. They select districts in which they will work and then assume that eventually every individual in that district will in some way be affected by the project. As a result, the number of beneficiaries is large and level of involvement in project activities varies widely among beneficiaries. In the latter situation, change will tend be more gradual and uneven among participants. Consequently, there will be smaller changes in the indicator values. With smaller changes in indicator values, greater numbers are required for representative sampling. The costs of M&E rise. PVOs are encouraged to be more specific and realistic in defining who will benefit from the project.

7.2 Control Groups

Control groups are useful tools in M&E because, as the name implies, they control for many confounding factors that can influence the interpretation of project results. There are essentially three types of control groups: internal, external and historical. The use of each has its' advantages and disadvantages. PVOs can use one or more types of control groups for monitoring and evaluating a single project. There is no preferred method. The intention here is only to make PVOs aware of different design methods. UNICEF and IFPRI publications noted on the reference list are useful sources of additional information on the use of control groups.

An internal control group is constructed from within the project areas and it comprised of households that could have participated in the project but did not. An advantage with this method is that exogenous or extraneous factors tend to effect participants and non-participants equally. In addition, using internal control groups is logistically simpler and cheaper since all sampled households are located in the same area. A disadvantage is that it is difficult to establish a good operational definition of participant, especially since many agricultural programs are designed to

have wide range effects, e.g.., improving market information systems, or chain reactions, e.g., farmer-to-farmer extension.

An external control group is comprised of households situated outside the range of project influence but with similar key characteristics as participating households. The disadvantage with external control groups is that it may be difficult to find areas with the same characteristics as the participant group but outside the area of project influence. In addition, there is no guarantee that extraneous events such as drought and floods will have equally impact in both areas.

The historical control group is composed of participant households only. The comparison, in this case, is made over time: before and after the project. The advantage to historical control groups is that since the same group is sampled in both instances, the key characteristics are same. The disadvantage is that it is difficult to control for extraneous events.

8. Recommendations

Recommendations are organized into three categories: those related to the institutional structure of monitoring and evaluation systems, the baseline questionnaire design, and future FAM projects. For detailed explanations or examples, the reader is encouraged to peruse the specific sections of the main body of the report.

8.1 Institutional Structure of PVO Monitoring and Evaluation

- PVOs should have an M&E officer in the field who is responsible for all M&E related activities at all stages of the process. That individual should have strong appropriate training in M&E and preferably experience in M&E applied to agriculture.
- Where PVO operations are small and resources limited, the M&E officer could be situated in a regional office or even the head office provided that a significant portion of her/his time was spent in the field assisting and training local field staff. If consultants are required, the officer should work closely with the consultants providing clear orientation and continuity.
- M&E plans should be developed early on in the project design stage.
- PVOs should conduct an assessment of issues related to establishing the M&E system and conducting field work within the specific geographic and cultural context of the proposed target areas. This could be incorporated into the initial project assessment phase.
- Managers need to provide clear explanations of their information needs early in the M&E design stage.
- PVOs should develop information sharing within their PVO either through the internet and/or publication and distribution of manuals and guidelines. This would include guides to M&E design and implementation as well as templates for quality action-oriented reporting. PVOs should make certain that IMPACT guides are available in all field offices.
- PVOs should develop information sharing mechanism among themselves. Through the internet, PVOs could air questions and concerns and share experiences.
- FFP could permit PVOs to include additional M&E staffing costs in their DAPs or FFP could fund an alternative form of M&E technical assistance.
- Where possible, PVOs should make links with ministries, national and international research stations, universities and other sources of technical assistance.

8.2 Formal Baseline Questionnaire Design

- PVOs should keep the monitoring and evaluation process simple. This includes limiting the number of indicators to monitor and streamlining the amount of data required to measure the selected indicators. Additional complementary studies establishing causation between factors and results can be conducted separately.
- PVOs should avoid selecting indicators that require extensive and rigorous data collection beyond that which is reasonably possible with a one-time formal survey or with the available resources and technical expertise.
- Every question on the baseline questionnaire should have a clear purpose and expected use for the resultant data.
- Data needs related to project management and program development but not performance reporting should be acquired through other smaller tailored surveys and not through the baseline survey.
- In general, PVOs need to apply much more attention to formulating baseline questions.
- PVOs should use the formats described above to guide baseline questionnaire design.

8.3 Further Studies

- A number of reputable institutes have been developing alternative approaches to M&E. FAM could conduct a review of approaches proposed by UNICEF, ISNAR, ITAD and a number of other organizations and evaluate the varies approaches in terms of their suitability for member PVOs.
- FAM could undertake a review of alternatives methods to assess and measure key agricultural topics such as technology adoption, soil conservation, market access, etc. This would include participatory and non-participatory as well as informal and formal methods.
- Conduct an analysis of M&E costs. The analysis could be broken down into several strategic subcomponents, e.g., implementing the baseline, repetitive monitoring tasks, comparing different methods for collecting data. Cost studies are highly dependent on PVO cooperation. To reduce the administrative burden of such a studies, particular PVO projects could be selected as case studies.
- Develop a series of performance measures and compare PVO operations based on these measures. Such a study would require significant disclosure and cooperation on the part of PVOs.
- Develop a series of technical guides for use by member PVO field staff.

Table 1: Information Available For the Review of USAID Title II PVO Agriculture Monitoring and Evaluation Methods:

PVO	Country/Project	DAP Obj	Indicators	Sampling	Questionnaire	Complete[1]	Field Contact
CRS	Kenya**						
	Guatemala, SC***						x
	Ethiopia	x	x				x
	Gambia	x	x				
	India	x	x		n		
Africare	Chad/Ouaddai FS	x	x		x	x	x
	Mozambique, oilseed	x	x	x	x	x	x
	Eritrea, irrigated ag	x	x		x	x	x
	Uganda						
ACDI/VOCA	Cabo Verde	x	x		x	x	x
	Uganda	x	x	x	x	x	x
World Vision	Mozambique	x	x		x	x	x
	Ethiopia	x	x		x	x	
Food For the Hungry	Mozambique	x	x	x	x	x	x
	Kenya***	x	x	x	NA		
	Ethiopia	x	x	x	x	x	x
	Bolivia	x	x	x	n		x
CARE	Ethiopia	x	x		x	x	x
	Kenya						
	Honduras	x	x		x	x	
	Mozambique	x	x		x	x	x
	Peru						
	Bangladesh**	m	m		m		
	Guatemala*						
Technoserve	Peru, Cochinilla, Tuna	x	x		x	x	
	Ghana	x	x				
	Kenya***						
Save the Children	Ethiopia	x	x				
	Mozambique	x	x		x	x	
ADRA	Ghana	x	x		n		
	Kenya						
	Madagascar***						
	Mozambique	x	x		x	x	
	Haiti***	x	x				
	Bolivia						
	Peru						
	Guatemala*						
Multiple PVO****	Ethiopia		x		x	x	

[1] indicates that all prerequisite documents are available. All of these projects were reviewed, with the acceptation of Care Honduras and Technoserve Ghana.
x in consultant's possession.
m baseline might have been completed prior to FY 97, questionnaire and other DAP material may be at Linkages.
n DAPs exist or a baseline was completed but Linkages does not have a copy of the documents.
* listed as FY 97 results activity but no mention on list of Title II project (as of 2/25/98) .
** listed on FY 97 results activity as an agriculture project but documents at Linkages suggests only health components.
*** DAP available at Linkages suggests that the project is too new.
**** Multiple PVO includes CRS, CARE, FHI, Save, and WV. USAID/Ethiopia requested that all Title II PVOs implement a "Special Objective Food Security and Nutrition Baseline Survey." Because PVOs were at different stages in the project cycle when the survey was implemented, it did not actually constitute a "baseline." Still the questionnaire was reviewed. Each PVO had their own set of objectives and indicators in place. See specific Ethiopia projects for details.
NA either baseline not yet implemented or PVO stated materials are not available.

Table 2. USAID/FFP Generic Indicators for Agricultural Productivity and Natural Resource Management

Category	Type of Indicator	Indicator
Agricultural Productivity	Impact	annual yield of targeted crops yield gaps (actual vs potential) value of agricultural production per vulnerable household months of household grain provisions percent of crops lost to pests or environment
	Annual Monitoring	annual yield of targeted crops number of hectares in which improved practices are adopted number of storage facilities built and used
Natural Resource Management	Impact	imputed soil erosion imputed soil fertility yields or yield variability
	Annual Monitoring	number of hectares in which NRM practices used seedling/sapling survival rate yields or yield variability

Table 3. Structure of Monitoring and Evaluation of PVOs With USAID Title II-Funded Agriculture Projects

PVO	Head Office M&E	Field Office M&E	M&E Execution	Technical Support	Use of sig testing	Impression of USAID and DAP process
ACDI/VOCA	no	yes: M&E officer has other tasks as well	Field staff assisted by head office FFP staff and consultant for design. Field staff, local gov inst, local university and local private firms for training. Field staff and local inst for execution.	IMPACT guidelines. Limited use of FAO materials or other references for sampling.	no	No indicators for micro-enterprise and credit programs
ADRA	yes				no	
Africare	no	no	Country rep, proj leader, head office staff, board member, and consultants for design. Field staff, consultants and local inst for training and execution.	IMPACT guidelines and staff. Assistance from MSF-CIS. WHO materials for sampling	no	Mission known to add burden to M&E activity. Generic indicators not always appropriate
CARE	yes	varies: M&E officer can have other tasks as well	Field staff and consultants for design and training. Field staff and local inst for execution. New CARE software for M&E (MER).	CARE manuals	limited and in only a few cases	Can interfere with the HHLS project identification and design process.
CRS*	no	varied: country director decides	Field staff, local university, consultants, and local inst for design, training and execution.	Limited assistance in agriculture from IMPACT, more from Linkages. Composing CRS manuals.	no	Need greater appreciation of PVO resources, capacity, and objectives. Some difficulties working w/missions. Some interference related to USAID's own reporting needs. Generic indicators not always appropriate. Confusion in the field concerning DAP requirements.
FHI	yes	varies	Local and field office for design, field office and consultants for training, field staff for execution.	FHI manuals, IMPACT guidelines and FAO publications	some use	Missions need to be more flexible, request that data be collected too frequently. Some interference related to USAID's own reporting needs.
Save	yes, but not for ag	varies	Field and head office staff and Local university consultants for design, training and execution	IMPACT manuals Composing Save manuals	no	Mission known to add burden to M&E
Technoserve	no	no	Mostly field staff but some assistance from consultants for design. Field staff for training and execution.	IMPACT guidelines. Used CARE's baseline	no	Generic indicators not always appropriate esp wrt marketing and credit.
World Vision	yes	yes	Field staff and consultants for design, training and execution. Field staff for crop cutting.		no	Mission known to add burden to M&E activity. Sometimes difficult to match USAID and other funding sources M&E needs, some interference related to USAID's own reporting needs.

*CRS is currently redesigning a complete overhaul of their approach to agriculture and M&E activities.
NOTE: Staff at Save the Children and ADRA were not available for a meeting. Any information listed here was extracted from documents.

Table 4: Inventory of Monitoring and Evaluation Methods Used by PVOs for Title II Agriculture* Projects, By PVO

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
ACDI/VOCA	Cape Verde	Sustained improvement in hh income and agricultural productivity through soil and water conservation (SWC), introduction of improved ag practices, and promotion of micro-enterprise.	1) imp access to food, 2) imp NRM and ag productivity in marginal areas; 3) imp credit facilities.	1) % inc targeted hh's income, inc # meals cons per day, inc dietary diversity scores of targeted hh, % inc hh income from irrig land, % inc net returns to land and water, % inc hh income of loan recip, % inc per cap food expenditure of loan recip; 2) m^3 top soil, ha reclaimed for cult, % inc maize and bean yields, % dec soil erosion, % rural works constructed by assoc, inc # assoc completing SWC contracts, % assoc profitable; 3) % inc loan recip, % loan recovery.	Mixed: formal hh and loan recip surveys, crop budgets, loan analysis documents, and program records.	Targeted refers to vulnerable and female headed households.
ACDI/VOCA	Uganda	Increase hh food security through increased production of target food crops and increased rural income from ag marketing including exports.	1) Capitalization of Food Sec Fund (FSF) to provide grants for target crop prod, 2) capitalization Co-op Bank (CB) to provide credit for target crop prod, 3) training for CB, 4) provide grants for mkt info and rural road rehabilitation.	inc target crop prod, inc hh net income, inc real value of ag prod, inc hh diet diversity; 2) total value of loans; 3) ave loan processing time, performing loans as % tot loans; 4) inc road use.	Mixed: formal hh survey, FSF forms, CB records, and traffic counts.	Also tracks % grant beneficiaries and loan disbursement by gender.
ADRA	Mozambique Maganja de Costa District Zambezia Province	Increase hh income derived from production of nutrient-rich food crops and cash crops, mainly cashew.	1) inc mkting of ag prod, 2) inc prod cashew and food via intercrop, 3) inc avail of food, 4) imp capacity of farmer assoc, 5) inc diversity of crops.	% inc hh w/assets, ave # mon of food stks; 1) inc % hh selling cashew, inc % hh selling crops, 2) inc % hh intercrop w/cashew, ave cashew prod; 3) inc % hh storing crops, inc % hh use imp seed; 4) inc % assoc w/"good functioning" status; 5) inc % hh w/fruit, inc % hh w/1+ veg.	Mixed: formal hh survey, and participant and farmer group surveys.	Collaborates with ORAM, a local PVO.
Africare	Mozambique Manica Province	Oilseed Food Security Initiative: develop sususstainable, small-scale oil seed	1) inc knowledge of, and interest in, oilseed prod; 2) facilitate oilseed mkting; 3) credit for presses; 4) training in sales and	1) % of target area w/oilseed prod and processing, inc % of hh w/oilseed prod, inc % hh w/oilseed processing, # or field demos, estab partners for oil seed enterprise, # seed sold, # presses sold, # parts produced, # of	Mixed: formal hh survey, price data from local mkt surveys, quarterly and annual reports.	

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
		(sunflower and sesame) production an processing industry.	maintenance of presses.	entities that multi and dist planting material.		
CARE	Ethiopia E. Hararghe W. Hararghe E. Shoa Addis Ababa	Food and Livelihood Program: increase production of, and access to, basic food crops.	1) inc food prod via dev of irrig and flood control, seed mult, and intro of imp ag pract; 2) inc income via inc ag prod.	% inc hh assets, % inc diversity of income sources, % inc primary edu attend; 1+2) % inc staple food prod, % inc value of tree crop prod, % inc hh w/short-cycle var, % inc hh w/imp ag pract, % inc hh w/NRM pract; 2) % inc value of hh assets, % inc diversity of hh income sources.	Mixed: formal hh and community surveys, 3x/yr assessments of potential ag prod, case studies on seed supply, focus groups, community interviews, and livelihood security assessments.	Used crop assessments for prod monitoring but no explanation of how measured. Farmer estimate on formal baseline. Value of tree crop by ag extension team.
CARE	Mozambique Nampula and Zambezia Provinces	VIDA: Oil seed (sunflower) production and processing (OPEN). Introduce sus ag practs, provide extension, and improve ag mkting (SAC). Development of sustainable oilseed enterprises (SOEC).	Sus Ag Comp (SAC): 1) inc prod of crops, 2) inc prod'vity w/imp seed, IPM, and imp sus ag pract 3) inc income from crop sales.	1+2) inc prod of selected crops, inc % hh w/imp seed pract, inc % hh w/2+ imp soil fert practs (for 2 yrs+), inc % hh grow 1+ new crop or var (for 2 yrs+), % dec harvest loss in % hh, inc time crop stored, inc # of seed producers; 3) inc hh sell 1+ new crop, inc % hh use mkt info, % inc value of sales, inc # of self-managed farmer mkt groups, inc access to 1+ mkt outlet, dec geographic difference in oil price, dec # hh w/out oil cons.	Mixed: formal hh survey, MSU price survey, PRA, case studies, on-station trials w/INIA, on-farm trials, and weekly extension reports.	Each indicator has target for % women. Has indicators for project operations. Say will monitor yields but no method given.
Catholic Relief Services	NA					
Food for the Hungry	Ethiopia South Gondar and Wollo Zones	Sus improvement in hh food security that includes NRM (incl pasture) and "crop prod'ivity and diversification" (CPD).	CPD: 1) train farmers in seed select, sus ag pract, fert app; 2) ext thru farmer demo plots; 3) input supply thru co-ops; 4) imp small-scale irrig.	inc yields and prod of major crops, 1+2) inc % hh w/imp fert pract, inc % hh w/imp ag pract, inc % hh growing veg or tubers, inc % hh w/imp var.	Formal hh survey.	For seed component worked w/MOA. Soil con and livestk separate from ag prod'ivity. (see Moz for yield calc).
Food for the Hungry	Mozambique Sofala Province	Ag Productivity, Mkting, and Enterprise Program: Increase availability	1) inc hh income from ag sales, 2) inc total prod of maize and sorghum; 3) inc self-provisioning of grain;	% inc in tot hh income; 1) inc % hh selling ag prod, inc hh income from ag sales, 2) % inc total prod maize and sorghum, 3) inc 4+ months hh able to subsist from own prod, 4) inc maize	Mixed: formal hh and KP surveys, and annual reporting by FHI/Moz research and extension	Has a set of generic survey methods, including sampling

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
		of food via adoption of sustainable ag pract and improved storage. Initiate farmer associations and training, adaptive research, and farmer-to farmer tech transfer. Improve input supply and marketing information systems.	4) inc maize and sorghum prod'vity, 5) inc avail of ag inputs, 6) imp knowledge of sus ag pract, 7) inc assoc member adoption of pract, 8) inc ag infrastructure, 9) Inc # assoc and members.	and sorghum yields, dec % maize and sorghum storage loss; 5) # agents selling ag inputs, 6) % hh adopted imp practices, % using imp storage, # assisted by FHI extensionist, # leader farmers trained, # extensionists participated in training, # org received FHI research results, 7) inc % assoc members adopt sus ag pract, 8) inc # demo plots, on-farm research, trails at research station, community gardens; inc # pract developed and extended, 9) inc # of assoc, inc # of members.	staff and assoc development teams.	procedure and "template" baseline and other questionnaires. Crop cuttings used to measure yields, tape measure for area.
Multiple PVO***	Ethiopia	Improve Household Food Security.	1) increase ag prod, 2) hh income, and 3) imp natural resource management.	dec % stunting, inc # months hh have sufficient food stocks, dec # months hh uses coping mech; 1) % inc yields 5 major crops, % inc prod of 5 major crops, % inc hh w/fert, % inc hh w/imp seed, % inc area irrigated, % inc hh w/other imp ag pract; 2) % inc hh w/inc in livstk ownership, % inc hh w/imp physical state of house, % inc hh w/inc diversity food cons or inc luxury cons, % inc hh w/inc savings; 3) inc communal area protected, dec soil erosion using USLE.		
Save The Children	Ethiopia		1) inc ag prod.	% women w/inc income, % women w/2nd loan; 1) % inc grain prod, % hh w/imp ag inputs, % people cons fruits.		
Save The Children	Mozambique Nampula Province (Nacala-A-Velha and Memba Districts)	Food Sec, Road Rehabilitation, and Community-based Natural Resource Management.	1) inc mkt access via road rehab, 2) inc sustainable food and cash crop prod via extension of imp NRM pract, intro of imp seed and storage, estab research trials, demonstration plots, nurseries, and seed mult.	1) % inc transpt of produce; 2) % hh w/inc yields, inc area under prod, inc # crops/hh, dec in post-harvest losses, inc income by proxy, # farmers trained w/demo plots, # of farmers trained in cashew tree grafting, # farmers w/imp seed and storage pract, % trained farmers w/2+ imp sus ag pract.	Mixed: formal hh survey, yield data in conjunction with MOA, and visual inspection of storage.	MSF/CIS assists in establishing and conducting baseline and PRAs. Collaborates with ADRA and JFS agroprocessing and trading firm.
Technserve	Peru Huanta, Lamas. and	Improving food availability and access focusing on coffee and pole bean	1) imp ag prod'vity, 2) imp ag process and mkting, 3) inc rural employment and hh income, 4) imp access	1) Tech assistance to # of rural enterprises, inc target product prod, inc target crop yields, inc cochineal prod and prod'vity, inc value of dry cochineal prod, % inc alpaca profit; 2) inc # hh	Mixed: formal hh survey; community, sub-sector, and case studies; and secondary	

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
	Puno districts	in Lamas, cochineal and prickly pear in Huanta, and Alpaca in Pumo.	to credit.	w/imp post-harvest pract, inc # hh w/imp NRM, inc rural income, inc % export quality dry cochineal prod, inc # hh w/imp cochineal and alpaca pract, inc cochineal and prickly pear price; 3) % inc hh income, inc # employ opportunities, dec % pop in extreme poverty, inc % pop consuming min calories; 4) inc credit avail, inc % small farmer credit recipients, inc small farmer savings, inc % hh w/land titles.	data.	
World Vision	Mozambique Nampula, Zambezia, Sofala, and Tete Provinces	Increase rural household income.	1) intro imp sus ag and NRM pract; 2) imp access to mkt and mkt info; 3) intro small-scale ag processing.	Inc % hh w/assets, % inc hh w/non-ag income source, inc % hh w/livsk, inc % hh prod fruit and veg, inc % hh prod high-protein food, % inc hh cons of edible oils, inc women & child cons diversity; 1) % inc in maize and rice yields, % inc maize and rice yields per hectare, dec yield gaps, % inc ave # of crops grown and sold, % inc hh prod veg and fruit, % inc hh prod protein-rich food, % inc hh prod oilseeds, % inc hh w/imp ag pract, % inc hh knowledge and use of NRM pract, % inc hh w/non-timber tree product; 2) inc volume mkt ag prod, inc value mkt ag prod, inc diversity of ag prod sold, dec transport costs, % inc ag prod for sale, % inc hh mkting fruit and veg, % inc hh prod bean, potato, onion or garlic, % inc mkt processed ag prod; 3) % inc hh w/ag processing, % inc hh mkt processed ag prod.	Mixed: formal hh surveys, yield evaluations, land measurement surveys, seed surveys, group records, monthly and quarterly reports, and PRA.	
World Vision	Ethiopia Tigray, Oromia, Amhara and SNNPR	NA	1) intro of imp ag pract, 2) provision of ag credit, 3) intro of imp NRM pract.	% inc per capita cons, % inc per capita prod, inc % irrig farms 1) inc % hh w/fruit trees, % inc hh using livstk management, inc % hh w/veg prod, inc % hh w/correct fert use, inc % hh w/recommended weeding pract, % inc area under irrig, inc % hh benefiting from irrig, inc % of hh w/imp sus ag pract, # hh able to maintain water pipes, inc % hh w/modern beehives, inc % hh w/forage manipulation; 2) inc % hh w/credit, inc % hh w/chem fert, inc % hh w/imp seed; 3) % hh w/tree plantation, inc % hh w/income from tree plantation, kg seed	Formal hh survey.	

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
				collected, kg seed dist, % seedling surviving 1st yr, ha of land protected and reforested, inc % hh raise own seedlings for mkt.		

distinction between what is a component of agricultural, agroprocessing, and natural resource management projects is not consistent across all projects. Therefore, what is considered agriculture for one project may not be included in agriculture under another project. This inventory was intended to be limited to those components monitored using, in part, the baseline survey tool. Extension activities, for example, are often monitored more extensively through other means. However, the connection between indicator and survey tool was not always clear from the available documents.

** Since all DAPs have the goal of increasing food security, this was not generally noted. The project "aim" was limited to the main agricultural components of the program.

*** Multiple PVO includes CRS, CARE, FHI, Save, and WV. USAID/Ethiopia requested that all Title II PVOs implement a "Special Objective Food Security and Nutrition Baseline Survey." Because PVOs were at different stages in the project cycle when the survey was implemented, it did not actually constitute a "baseline." Still the questionnaire was reviewed. Each PVO had had their own set of objectives and indicators in place. See specific Ethiopia projects for details.

Table 5: Inventory of Monitoring and Evaluation Methods Used by PVOs for Title II Agriculture* Projects, By Country

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
ACDI/VOCA	Cape Verde	Sustained improvement in hh income and ag productivity through soil and water conservation (SWC), introduction of improved agricultural practices, and promotion of micro-enterprise.	1) imp access to food, 2) imp NRM and ag productivity in marginal areas; 3) imp credit facilities.	1) % inc targeted hh's income, inc # meals cons per day, inc dietary diversity scores of targeted hh, % inc hh income from irrig land, % inc net returns to land and water, % inc hh income of loan recip, % inc per cap food expenditure of loan recip; 2) m^3 top soil, ha reclaimed for cult, % inc maize and bean yields, % dec soil erosion, % rural works constructed by assoc, inc # assoc completing SWC contracts, % assoc profitable; 3) % inc loan recip, % loan recovery.	Mixed: formal hh and loan recip surveys, crop budgets, loan analysis documents, and program records.	Targeted refers to vulnerable and female headed households.
CARE	Ethiopia E. Hararghe W. Hararghe E. Shoa Addis Ababa	Food and Livelihood Program: increase production of, and access to, basic food crops.	1) inc food prod via dev of irrig and flood control, seed mult, and intro of imp ag pract; 2) inc income via inc ag prod.	% inc hh assets, % inc diversity of income sources, % inc primary edu attend; 1+2) % inc staple food prod, % inc value of tree crop prod, % inc hh w/short-cycle var, % inc hh w/imp ag pract, % inc hh w/NRM pract; 2) % inc value of hh assets, % inc diversity of hh income sources.	Mixed: formal hh and community surveys, 3x/yr assessments of potential ag prod, case studies on seed supply, focus groups, community interviews, and livelihood security assessments.	Used crop assessments for prod monitoring but no explanation of how measured. Farmer estimate on formal baseline. Value of tree crop by ag extension team.
Food for the Hungry	Ethiopia South Gondar and Wollo Zones	Sus improvement in hh food security that includes NRM (incl pasture) and "crop prod'ivity and diversification" (CPD).	CPD: 1) train farmers in seed select, sus ag pract, fert app; 2) ext thru farmer demo plots; 3) input supply thru co-ops; 4) imp small-scale irrig.	inc yields and prod of major crops, 1+2) inc % hh w/imp fert pract, inc % hh w/imp ag pract, inc % hh growing veg or tubers, inc % hh w/imp var.	Formal hh survey.	For seed component worked w/MOA. Soil con and livestk separate from ag prod'ivity. (see Moz for yield calc).
Multiple PVO***	Ethiopia	Improve Household Food Security.	1) increase ag prod, 2) hh income, and 3) imp natural resource management.	dec % stunting, inc # months hh have sufficient food stocks, dec # months hh uses coping mech; 1) % inc yields 5 major crops, % inc prod of 5 major crops, % inc hh w/fert, % inc hh w/imp		

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
				seed, % inc area irrigated, % inc hh w/other imp ag pract; 2) % inc hh w/inc in livstk ownership, % inc hh w/imp physical state of house, % inc hh w/inc diversity food cons or inc luxury cons, % inc hh w/inc savings; 3) inc communal area protected, dec soil erosion using USLE.		
Save The Children	Ethiopia		1) inc ag prod.	% women w/inc income, % women w/2nd loan; 1) % inc grain prod, % hh w/imp ag inputs, % people cons fruits.		
World Vision	Ethiopia Tigray, Oromia, Amhara and SNNPR	NA	1) intro of imp ag pract, 2) provision of ag credit, 3) intro of imp NRM pract.	% inc per capita cons, % inc per capita prod, inc % irrig farms 1) inc % hh w/fruit trees, % inc hh using livstk management, inc % hh w/veg prod, inc % hh w/correct fert use, inc % hh w/recommended weeding pract, % inc area under irrig, inc % hh benefiting from irrig, inc % of hh w/imp sus ag pract, # hh able to maintain water pipes, inc % hh w/modern beehives, inc % hh w/forage manipulation; 2) inc % hh w/credit, inc % hh w/chem fert, inc % hh w/imp seed; 3) % hh w/tree plantation, inc % hh w/income from tree plantation, kg seed collected, kg seed dist, % seedling surviving 1st yr, ha of land protected and reforested, inc % hh raise own seedlings for mkt.	Formal hh survey.	
ADRA	Mozambique Maganja de Costa District Zambezia Province	Increase hh income derived from production of nutrient-rich food crops and cash crops, mainly cashew.	1) inc mkting of ag prod, 2) inc prod cashew and food via intercrop, 3) inc avail of food, 4) imp capacity of farmer assoc, 5) inc diversity of crops.	% inc hh w/assets, ave # mon of food stks; 1) inc % hh selling cashew, inc % hh selling crops, 2) inc % hh intercrop w/cashew, ave cashew prod; 3) inc % hh storing crops, inc % hh use imp seed; 4) inc % assoc w/"good functioning" status; 5) inc % hh w/fruit, inc % hh w/1+ veg.	Mixed: formal hh survey, and participant and farmer group surveys.	Collaborates with ORAM, a local PVO.
Africare	Mozambique Manica Province	Oilseed Food Security Initiative: develop sustainable, small-scale oil seed (sunflower and sesame) production an processing industry.	1) inc knowledge of, and interest in, oilseed prod; 2) facilitate oilseed mkting; 3) credit for presses; 4) training in sales and maintenance of presses.	1) % of target area w/oilseed prod and processing, inc % of hh w/oilseed prod, inc % hh w/oilseed processing, # or field demos, estab partners for oil seed enterprise, # seed sold, # presses sold, # parts produced, # of entities that multi and dist planting material.	Mixed: formal hh survey, price data from local mkt surveys, quarterly and annual reports.	

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
CARE	Mozambique Nampula and Zambezia Provinces	VIDA: Oil seed (sunflower) production and processing (OPEN). Introduce sus ag practs, provide extension, and improve agricultural mkting (SAC). Development of sustainable oilseed enterprises (SOEC).	Sus Ag Comp (SAC): 1) inc prod of crops, 2) inc prod'vity w/imp seed, IPM, and imp sus ag pract 3) inc income from crop sales.	1+2) inc prod of selected crops, inc % hh w/imp seed pract, inc % hh w/2+ imp soil fert practs (for 2 yrs+), inc % hh grow 1+ new crop or var (for 2 yrs+), % dec harvest loss in % hh, inc time crop stored, inc # of seed producers; 3) inc hh sell 1+ new crop, inc % hh use mkt info, % inc value of sales, inc # of self-managed farmer mkt groups, inc access to 1+ mkt outlet, dec geographic difference in oil price, dec # hh w/out oil cons.	Mixed: formal hh survey, MSU price survey, PRA, case studies, on-station trials w/INIA, on-farm trials, and weekly extension reports.	Each indicator has target for % women. Has indicators for project operations. Say will monitor yields but no method given.
Food for the Hungry	Mozambique Sofala Province	Ag Productivity, Mkting, and Enterprise Program: Increase availability of food via adoption of sussustainable ag pract and improved storage. Initiate farmer associations and training, adaptive research, and farmer-to farmer tech transfer. Improve input supply and marketing information systems.	1) inc hh income from ag sales, 2) inc total prod of maize and sorghum; 3) inc self-provisioning of grain; 4) inc maize and sorghum prod'vity, 5) inc avail of ag inputs, 6) imp knowledge of sus ag pract, 7) inc assoc member adoption of pract, 8) inc ag infrastructure, 9) Inc # assoc and members.	% inc in tot hh income; 1) inc % hh selling ag prod, inc hh income from ag sales, 2) % inc total prod maize and sorghum, 3) inc 4+ months hh able to subsist from own prod, 4) inc maize and sorghum yields, dec % maize and sorghum storage loss; 5) # agents selling ag inputs, 6) % hh adopted imp practices, % using imp storage, # assisted by FHI extensionist, # leader farmers trained, # extensionists participated in training, # org received FHI research results, 7) inc % assoc members adopt sus ag pract, 8) inc # demo plots, on-farm research, trails at research station, community gardens; inc # pract developed and extended, 9) inc # of assoc, inc # of members.	Mixed: formal hh and KP surveys, and annual reporting by FHI/Moz research and extension staff and assoc development teams.	Has a set of generic survey methods, including sampling procedure and "template" baseline and other questionnaires. Crop cuttings used to measure yields, tape measure for area.
Save The Children	Mozambique Nampula Province (Nacala-A-Velha and Memba Districts)	Food Sec, Road Rehabilitation, and Community-based Natural Resource Management.	1) inc mkt access via road rehab, 2) inc sus food and cash crop prod via extension of imp NRM pract, intro of imp seed and storage, estab research trials, demo plots, nurseries, and seed mult.	1) % inc transpt of produce; 2) % hh w/inc yields, inc area under prod, inc # crops/hh, dec in post-harvest losses, inc income by proxy, # farmers trained w/demo plots, # of farmers trained in cashew tree grafting, # farmers w/imp seed and storage pract, % trained farmers w/2+ imp sus ag pract.	Mixed: formal hh survey, yield data in conjunction with MOA, and visual inspection of storage.	MSF/CIS assisted in establishing and conducting the agriculture baseline and PRAs. Collaborates with ADRA and JFS agroprocessing and trading firm.
World Vision	Mozambique	Increase rural	1) intro imp sus ag and	Inc % hh w/assets, % inc hh w/non-ag income	Mixed: formal hh	

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
	Nampula, Zambezia, Sofala, and Tete Provinces	household income.	NRM pract; 2) imp access to mkt and mkt info; 3) intro small-scale ag processing.	source, inc % hh w/livsk, inc % hh prod fruit and veg, inc % hh prod high-protein food, % inc hh cons of edible oils, inc women & child cons diversity; 1) % inc in maize and rice yields, % inc maize and rice yields per hectare, dec yield gaps, % inc ave # of crops grown and sold, % inc hh prod veg and fruit, % inc hh prod protein-rich food, % inc hh prod oilseeds, % inc hh w/imp ag pract, % inc hh knowledge and use of NRM pract, % inc hh w/non-timber tree product; 2) inc volume mkt ag prod, inc value mkt ag prod, inc diversity of ag prod sold, dec transport costs, % inc ag prod for sale, % inc hh mkting fruit and veg, % inc hh prod bean, potato, onion or garlic, % inc mkt processed ag prod; 3) % inc hh w/ag processing, % inc hh mkt processed ag prod.	surveys, yield evaluations, land measurement surveys, seed surveys, group records, monthly and quarterly reports, and PRA.	
Catholic Relief Services	NA					
Technserve	Peru Huanta, Lamas. and Puno districts	Improving food availability and access focusing on coffee and pole bean in Lamas, cochineal and prickly pear in Huanta, and Alpaca in Pumo.	1) imp ag prod'vity, 2) imp ag process and mkting, 3) inc rural employment and hh income, 4) imp access to credit.	1) Tech assistance to # of rural enterprises, inc target product prod, inc target crop yields, inc cochineal prod and prod'vity, inc value of dry cochineal prod, % inc alpaca profit; 2) inc # hh w/imp post-harvest pract, inc # hh w/imp NRM, inc rural income, inc % export quality dry cochineal prod, inc # hh w/imp cochineal and alpaca pract, inc cochineal and prickly pear price; 3) % inc hh income, inc # employ opportunities, dec % pop in extreme poverty, inc % pop consuming min calories; 4) inc credit avail, inc % small farmer credit recipients, inc small farmer savings, inc % hh w/land titles.	Mixed: formal hh survey; community, sub-sector, and case studies; and secondary data.	
ACDI/VOCA	Uganda	Increase hh food security through increased production of target food crops and increased rural income from ag marketing including	1) Capitalization of Food Sec Fund (FSF) to provide grants for target crop prod, 2) capitalization Co-op Bank (CB) to provide credit for target crop prod, 3) training for CB, 4)	inc target crop prod, inc hh net income, inc real value of ag prod, inc hh diet diversity; 2) total value of loans; 3) ave loan processing time, performing loans as % tot loans; 4) inc road use.	Mixed: formal hh survey, FSF forms, CB records, and traffic counts.	Also tracks % grant beneficiaries and loan disbursement by gender.

PVO	Country	Aim With Respect to Agriculture**	Intermediate Activities	Impact and Intermediate Indicators	Method	Comment
		exports.	provide grants for mkt info and rural road rehab.			

distinction between what is a component of agricultural, agroprocessing, and natural resource management projects is not consistent across all projects. Therefore, what is considered agriculture for one project may not be included in agriculture under another project. This inventory was intended to be limited to those components monitored using, in part, the baseline survey tool. Extension activities, for example, are often monitored more extensively through other means. However, the connection between indicator and survey tool was not always clear from the available documents.

** Since all DAPs have the goal of increasing food security, this was not generally noted. The project "aim" was limited to the main agricultural components of the program.

*** Multiple PVO includes CRS, CARE, FHI, Save, and WV. USAID/Ethiopia requested that all Title II PVOs implement a "Special Objective Food Security and Nutrition Baseline Survey." Because PVOs were at different stages in the project cycle when the survey was implemented, it did not actually constitute a "baseline." Still the questionnaire was reviewed. Each PVO had had their own set of objectives and indicators in place. See specific Ethiopia projects for details.

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